What is claimed is:

1. A rapid prototyping apparatus comprising:

a dispenser for controllably dispensing a flowable material which is solidifiable upon being dispensed;

a platform for supporting a cross-section of a three-dimensional object and providing a working surface for building a next object cross-section;

at least one indexer coupled to the dispenser and to the platform for relatively displacing the dispenser and the working surface in at least two dimensions, comprising a scanning direction and an index direction; and

a controller coupled to the indexer and to the dispenser for causing material to be dispensed over the working surface in accordance with a selected style.

2. The apparatus of claim 1 wherein the apparatus is a selective deposition modeling apparatus, and the dispenser is configured to selectively dispense material in accordance with the selected style.

3. The apparatus of claim 2 wherein the controller is configured to provide said style which is a building style.

4. The apparatus of claim 2 wherein the controller is configured to provide said style which is a support style.

5. The apparatus of claim 3 wherein the controller is configured to provide said building style which specifies overprinting in the scan direction.

6. The apparatus of claim 3 wherein the controller is configured to provide said building style which specifies higher resolution in the scan direction than the index direction.

7. The apparatus of claim 3 wherein the controller is configured to provide said building style which specifies a higher drop density ratio for down-facing skin surfaces than for interior regions of the object.

8. The apparatus of claim 3 wherein the controller is configured to provide said building style which specifies extending a down-facing skin region a plurality of layers above a down-facing surface.

9. The apparatus of claim 8 wherein the controller is configured to provide said building style which specifies extending said down-facing skin region 5 layers above said down-facing surface.

10. The apparatus of claim 8 wherein the controller is configured to provide said building style which specifies extending said down-facing skin region 10 layers above said down-facing surface.

11. The apparatus of claim 3 wherein the controller is configured to provide said building style which specifies a higher drop density ratio for forming up-facing skin surfaces than for interior portions of the object.

12. The apparatus of claim 3 wherein the controller is configured to provide said building style which specifies extending an up-facing skin region a plurality of layers below an up-facing surface.

13. The apparatus of claim 12 wherein the controller is configured to provide said building style which specifies extending said up-facing skin region 5 layers below said up-facing surface.

14. The apparatus of claim 12 wherein the controller is configured to provide said building style which specifies extending said up-facing skin region 10 layers below said up-facing surface.

15. The apparatus of claim 3 wherein the controller is configured to provide said building style which specifies using a higher drop density ratio for forming boundary regions of the object than for forming interior regions of the object.

16. The apparatus of claim 3 wherein the controller is configured to provide said building style which specifies extending a boundary region a plurality of drop widths into an interior of the object.

17. The apparatus of claim 16 wherein the controller is configured to provide said building style which specifies extending said boundary region at least 2 drop widths into the interior of the object.

18. The apparatus of claim 16 wherein the controller is configured to provide said building style which specifies extending said boundary region at least 4 drop widths into the interior of the object.

19. The apparatus of claim 3 wherein the controller is configured to provide said building style

which specifies forming an interior region of the object with checkerboard supports.

20. The apparatus of claim 3 wherein the controller is configured to provide said building style which specifies forming an interior region of the object with line supports.

21. The apparatus of claim 3 wherein the controller is configured to provide said building style which specifies forming an interior region of the object with column supports.

22. The apparatus of claim 3 wherein the controller is configured to provide said building style which specifies forming an interior portion of the object with arch supports.

23. The apparatus of claim 3 wherein the controller is configured to provide said building style which specifies changing the scan direction between two layers.

24. The apparatus of claim 3 wherein the controller is configured to provide said building style which specifies reversing the scan direction between two layers.

25. The apparatus of claim 3 wherein the controller is configured to provide said building style which specifies reversing the index direction between two layers.

26. The apparatus of claim 3 wherein the controller is configured to provide said building style which specifies altering the scan and index directions between two layers.

27. The apparatus of claim 3 wherein the controller is configured to provide said building style which specifies reversing the scan and index directions between two layers.

28. The apparatus of claim 3 wherein the dispenser comprises at least one multi-jet ink-jet dispensing head.

29. The apparatus of claim 3 wherein the controller is configured to provide said building style which specifies forming the object through raster scanning.

30. The apparatus of claim 3 wherein the controller is configured to provide said building style

which specifies forming the object through raster scanning having a length and width limited to a dispensing region required by a layer being formed.

31. The apparatus of claim 3 wherein the controller is configured to provide said building style which specifies forming the object through vector scanning.

32. The apparatus of claim 3 wherein the controller is configured to provide said building style which specifies forming an interior region of the object through raster scanning, and a boundary region of the object through vector scanning.

33. The apparatus of claim 28 wherein the controller is configured to provide said building style which specifies randomizing from layer to layer the jets which dispense on any XY location.

34. The apparatus of claim 28 wherein the controller is configured to provide said building style which specifies printing using all jets a test pattern, and detecting therefrom jets which are not firing properly.

35. The apparatus of claim 3 wherein the controller is configured to provide said building style which specifies maintaining a temperature of the object above a minimum temperature to reduce curl distortion.

36. The apparatus of claim 3 wherein the controller is configured to provide said building style which specifies separately forming different components of the object to enable object surfaces to be reoriented as up-facing surfaces during part building, and then combining the separately formed components.

37. The apparatus of claim 4 wherein the controller is configured to provide said support style which specifies checkerboard supports.

38. The apparatus of claim 4 wherein the controller is configured to provides said support style which specifies employing a higher number of passes per layer to form supports than to form the object.

39. The apparatus of claim 4 wherein the controller is configured to provide said support style which specifies drop-on/drop-off checkerboard supports.

40. The apparatus of claim 4 wherein the controller is configured to provide said support style which specifies line supports.

41. The apparatus of claim 4 wherein the controller is configured to provide said support style which specifies straight line supports.

42. The apparatus of claim 4 wherein the controller is configured to provide said support style which specifies curved line supports.

43. The apparatus of claim 4 wherein the controller is configured to provide said support style which specifies broken line supports.

44. The apparatus of claim 4 wherein the controller is configured to provide said support style specifies supports with shelving on at least part of a layer.

45. The apparatus of claim 4 wherein the controller is configured to provide said support style which specifies offsetting supports on layers above shelving.

46. The apparatus of claim 4 wherein the controller is configured to provide said support style which specifies shelving on less than 10 consecutive layers.

47. The apparatus of claim 4 wherein the controller is configured to provide said support style which specifies shelving on less than 5 consecutive layers.

48. The apparatus of claim 4 wherein the controller is configured to provide said support style which specifies shelving on a whole first layer.

49. The apparatus of claim 4 wherein the controller is configured to provide said support style which specifies shelving in X-Y regions not shelved in a previous layer.

50. The apparatus of claim 4 wherein the controller is configured to provide said support style which specifies complementary shelving on subsequent layers.

51. The apparatus of claim 4 wherein the controller is configured to provide said support style which specifies column supports.

52. The apparatus of claim 4 wherein the controller is configured to provide said support style which specifies column supports with shelving.

53. The apparatus of claim 4 wherein the controller is configured o provide said support style which specifies offset column supports.

54. The apparatus of claim 4 wherein the controller is configured to provide said support style which specifies N-by-N column supports defined in terms of drop width.

55. The apparatus of claim 4 wherein the controller is configured to provide said support style which specifies N-by-N column supports defined in terms of pixels.

56. The apparatus of claim 55 wherein N is 2.

57. The apparatus of claim 55 wherein N is 3.

58. The apparatus of claim 4 wherein the controller is configured to provide said support style which specifies changing the support pattern in regions at least N layers below a down-facing surface.

59. The apparatus of claim 58 wherein N is 4.

60. The apparatus of claim 58 wherein N is 9.

61. The apparatus of claim 4 wherein the controller is configured to provide said support style which specifies decreasing the drop density ratio in regions approaching a down-facing surface.

62. The apparatus of claim 61 wherein the support style further specifies utilizing at least one layer

of shelving when transitioning to lower drop density ratio supports.

63. The apparatus of claim 61 wherein the support style further specifies switching from column supports to checkerboard supports in regions when approaching a down-facing surface.

64. The apparatus of claim 4 wherein the support style further specifies changing the support pattern in regions greater than a predetermined number of layers above an up-facing surface.

65. The apparatus of claim 64 wherein the predetermined number is 4.

66. The apparatus of claim 64 wherein the predetermined number is 9.

67. The apparatus of claim 64 wherein the support style further specifies lowering the drop density ratio in regions after leaving an up-facing surface.

68. The apparatus of claim 67 wherein the support style further specifies utilizing at least one layer of shelving in transitioning from higher to lower drop density ratio supports.

69. The apparatus of claim 68 wherein the support style further specifies switching from column supports to checkerboard supports after leaving an up-facing surface.

70. The apparatus of claim 4 wherein the controller is configured to provide said support style which specifies arch supports.

71. The apparatus of claim 4 wherein the controller is configured to provide said support style which specifies air pressure supports.

72. The apparatus of claim 4 wherein the controller is configured to provide said support style which specifies differing the support pattern at different areas of a cross-section.

73. The apparatus of claim wherein the controller is configured to provide said support style which specifies displacing the support structure from a boundary of the object by a first predetermined number of pixels in the scan direction, and a second predetermined number of pixels in the index

direction.

74. The apparatus of claim 4 wherein the controller is configured to provide said support style which specifies building supports with a material different than that used to from surfaces and boundary regions of the object.

75. The apparatus of claim 4 wherein the controller is configured to provide said support style which specifies bulk dispensing supports on each layer after material used to form the object is selectively dispensed.

76. The apparatus of claim 4 wherein the controller is configured to provide said support style which specifies the use of a water soluble material to build supports.

77. The apparatus of claim 3 wherein the controller is configured to provide said build style which specifies uniform temperature building.

78. The apparatus of claim 3 wherein the controller is configured to provide said build style which specifies subpixel firing.

79. The apparatus of claim 3 wherein the controller is configured to provide said build style which specifies sub-raster line firing.

80. The apparatus of claim 3 wherein the controller is configured to provide said build style which specifies the use of material with a black body radiator added.

81. The apparatus of claim 78 wherein the build style further specifies subpixeling through shifted time of flight data.

82. The apparatus of claim 4 wherein the support style specifies bigger droplets for supports than for the object.

83. The apparatus of claim 3 wherein the build style further specifies a material having inserted interlaced thermal conductors.

84. The apparatus of claim 3 wherein the build style further specifies object sensitive interlacing.

85. The apparatus of claim 3 wherein the build style further specifies drop width compensation.

86. The apparatus of claim 3 wherein the build style further specifies over-printing width compensation.

87. The apparatus of claim 3 wherein the controller is configured to provide said build style which specifies a spacing between the orifice of the dispenser and the working surface which is large enough such that the droplets form semi-spherical drops upon impact.

88. The apparatus of claim 4 wherein the support style specifies lagging support building behind part building by at least one layer to avoid distortion of the supports caused by planarization.

89. The apparatus of claim 3 wherein the build style specifies planarization through melting alone.

90. The apparatus of claim 3 wherein the build style specifies planarization through melting in combination with scraping.

91. The apparatus of claim 3 wherein the build style specifies planarization through melting in combination with scraping and rotation.

92. A method for rapid prototyping comprising:

controllably dispensing a flowable material which is solidifiable upon being dispensed;

supporting a cross-section of a three-dimensional object and providing a working surface for building a next object cross-section;

relatively displacing the dispenser and the working surface in at least two dimensions, comprising a scanning direction and an index direction; and

dispensing material over the working surface in accordance with a selected style.

93. The method of claim 92 further comprising selectively dispensing material over the working surface in accordance with the selected style.

94. The method of claim 93 wherein said style which is a building style.

95. The method of claim 93 wherein said style which is a support style.

96. The apparatus of claim 1 additionally comprising means for forming support structures which branch out beyond material dispensed on an immediately preceding lamina wherein the branching results in more support structures contacting a down-facing object surface than the number of support structures from which the branching was initiated.

97. The method of claim 92 additionally comprising the step of forming support structures which branch out beyond material dispensed on an immediately preceding lamina wherein the branching results in more support structures contacting a down-facing object surface than the number of support structures from which the branching was initiated.

98. The apparatus of claim 1 additionally comprising means directing droplets at a focal plane below a level of an actual working surface for achieving a self correcting accumulation in a direction perpendicular to a plane of the cross-sections.

99. The method of claim 92 additionally comprising the step of directing droplets at a focal plane below a level of an actual working surface for achieving a self correcting accumulation in a direction perpendicular to a plane of the cross-sections.

100. The apparatus of claim 1 additionally comprising means for directing a cooling gas onto the surface of a partially formed object and means for removing the cooling gas from the area above said surface.

101. The method of claim 92 additionally comprising the step of directing a cooling gas onto the surface of a partially formed object and the step of removing the cooling gas from the area above said surface.